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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,013	02/27/2002	William Christopher Hardy	RIC01068	6962

25537 7590 09/30/2003

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TECHNOLOGY LAW DEPARTMENT
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EXAMINER	
RYMAN, DANIEL J	

ART UNIT	PAPER NUMBER
2665	7

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,013	HARDY, WILLIAM CHRISTOPHER	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 7-38* is/are rejected.

7)☒ Claim(s) *5 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Response, filed 8/25/2003, with respect to the rejection(s)of claim(s) 1-38 under Newman et al (USPN 5,940,472) in view of Kenney (USPN 6,208,618) have been fully considered and are persuasive. Specifically, Applicant's argument that Newman failed to disclose having a set of waveforms since the signaling message, which contains the sequence numbers, is sent on a separate line (see page 5 of the response), is persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Randic (USPN 6,275,797) in view of Fitch (USPN 5,633,909).

2. Further, Applicant states that the Fig. 2 was amended to include ref. 108; however, Examiner did not receive amended drawings. Therefore, the objections to Fig. 2 still stand.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: ref. 108 (see page 10, line 8). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 7-9, 22, 23, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randic (USPN 6,275,797).

6. Regarding claims 1, 22, and 33-35, Randic discloses a method, system, and computer readable medium for testing telecommunications equipment in a network, including a packet switched network, the method and program comprising steps of and the system comprising means for: establishing a telephonic connection between a first network location and a second network location (Figs. 2 and 3; col. 2, lines 30-46; and col. 4, line 31-col. 5, line 67); transmitting at least one set of N waveforms (words from a voice test file) from the first network location, each transmitted waveform including a waveform characteristic operative to assign a predetermined value relative to other waveforms in the at least one set such that a predetermined sequence of values are assigned to packets carrying the N transmitted waveforms (col. 3, lines 50-61 and col. 6, lines 20-43) where it is implicit that each waveform has a waveform characteristic operative to assign a predetermined value relative to other waveforms in the at least one set since each waveform is distinguishable from the other waveforms in the set and where the predetermined sequence of values is set by the reception order to the file (i.e. "This is a test" is a predetermined sequence of particular words distinguishable from "Is this a test" where the predetermined sequence is changed and distinguishable from "This is a beach" where the predetermined values are changed); receiving at least one telephonic signal at the second network location via the communications channel (col. 5, line 23-col. 6, line 43); processing the at least one telephonic signal to obtain a received sequence of values (col. 5, line 23-col. 6, line 43); and comparing the received sequence of values to the predetermined sequence of transmitted values to detect dropped packets without having access to packet switched network

control data (col. 5, line 23-col. 6, line 43, esp. col. 5, lines 44-67) where it is implicit that detecting a reduced quality of communication also detects dropped packets.

7. Regarding claim 7, referring to claim 1, Randic discloses that each waveform includes a first segment and a second segment (col. 4, line 31-67) where "segment" is a very broad term which can incorporate a variety of meanings. Here, a segment will be interpreted to mean a single letter of a word, such that each waveform (word) includes a first segment and second segment.

8. Regarding claim 8, referring to claim 7, Randic discloses that the second segment includes the representative waveform characteristic (col. 4, line 31-67) where each letter includes the representative waveform characteristic since it is the letters which comprise the representative waveform characteristic (i.e. "the" and "tie" are different waveform characteristics where only the second segment has changed).

9. Regarding claim 9, referring to claim 1, Randic discloses that each predetermined value includes a predetermined bit pattern (col. 4, line 31-67).

10. Regarding claim 23, referring to claim 22, Randic discloses that the transmission unit further comprises: a computer-readable medium for storing data representing the at least one set of N waveforms; a processor coupled to the computer readable medium, the processor being programmed to retrieve the data from the computer readable medium; and a codec device for converting the data into a signal suitable for transmission over the telecommunications network (col. 4, line 31-col. 6, line 43).

11. Claims 2-4, 11, 12, 14-19, 24-28, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randic (USPN 6,275,797) as applied to claims 1, 14, 22, and 35 above, and further in view of Fitch (USPN 5,633,909).

12. Regarding claims 2 and 3, referring to claim 1, Randic does not expressly disclose that the representative waveform characteristic is a peak power level or average power level since Randic discloses comparing matching words rather than power levels (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that using power levels to compare a known test signal with a received test signal is a well known technique for accomplishing a comparison (col. 7, lines 33-39). Examiner takes official notice that peak power and average power are two well-known power measurements. It would have been obvious to one of ordinary skill in the art at the time of the invention to use peak power or average power as the waveform characteristic since using peak power or average power rather than speech recognition to compare the received and known waveforms is well known in the art where this results in voice recognition software not being needed.

13. Regarding claim 4, referring to claim 1, Randic does not expressly disclose that each waveform in the set of N waveforms includes a representative waveform characteristic corresponding to one of N peak power levels since Randic discloses comparing matching words rather than power levels (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that using power

levels to compare a known test signal with a received test signal is a well known technique for accomplishing a comparison (col. 7, lines 33-39), where it is implicit that each segment of the signal will have a power level different from other segments. Examiner takes official notice that peak power is a well-known power measurement. It would have been obvious to one of ordinary skill in the art at the time of the invention to have each waveform in the set of N waveforms includes a representative waveform characteristic corresponding to one of N peak power levels since using peak power rather than speech recognition to compare the received and known waveforms is well known in the art where this results in voice recognition software not being needed.

14. Regarding claim 11, referring to claim 1, Randic does not expressly disclose that the representative waveform characteristic includes a frequency of the waveform since Randic discloses comparing matching words rather than frequencies (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that using frequency characteristics to compare a known test signal with a received test signal is a well-known technique for accomplishing a comparison (col. 7, lines 40-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a frequency as the waveform characteristic since using frequencies rather than speech recognition to compare the received and known waveforms is well known in the art where this results in voice recognition software not being needed.

15. Regarding claim 12, referring to claim 1, Randic does not expressly disclose that the representative waveform characteristic includes a number of phase changes present in a segment

of the waveform since Randic discloses comparing matching words rather than phase changes (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that using a variety of methods to compare a known test signal with a received test signal are known and are applicable to compare a known telephonic signal to a received telephonic signal (col. 7, lines 57-58). Using the number of phase changes as the representative waveform characteristic is not explicitly disclosed; however, Examiner takes official notice that counting the number of phase changes is a well known method for comparison of two signals. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a the number of phase changes as the waveform characteristic since using the number of phase changes rather than speech recognition to compare the received and known waveforms is well known in the art where this results in voice recognition software not being needed.

16. Regarding claim 14, referring to claim 1, Randic discloses dividing the at least one processed signal into received waveform sections having a duration substantially identical to the transmitted waveform (col. 6, lines 9-35). Randic does not expressly disclose dividing the at least one telephonic signal into received waveform sections having a duration substantially identical to the transmitted waveform since Randic performs speech recognition on the entire received waveform (col. 6, lines 9-35). Fitch teaches, in a system for generating calls and testing telephone equipment, dividing the at least one telephonic signal into received waveform sections having a duration substantially identical to the transmitted waveform (col. 6, line 51-col. 7, line 58) where it is implicit that this is done in order to make a valid comparison between the

received and known waveforms. It would have been obvious to one of ordinary skill in the art at the time of the invention to divide the at least one telephonic signal into received waveform sections having a duration substantially identical to the transmitted waveform in order to make a valid comparison between the received and known waveforms.

17. Regarding claims 15, 24, and 36, referring to claims 14, 22, and 35, Randic in view of Fitch discloses analyzing each received waveform section to extract a received waveform characteristic (Fitch: col. 6, line 51-col. 7, line 58); assigning each received waveform section a received value based on the received waveform characteristic (Fitch: col. 6, line 51-col. 7, line 58); and generating a sequence of received values based on the step of assigning to obtain the received sequence of value (Fitch: col. 6, line 51-col. 7, line 58).

18. Regarding claims 16, 17, 25, and 26, referring to claims 15 and 24, Randic in view of Fitch discloses that a deviation between the predetermined sequence of values and the sequence of section values corresponds to a dropped packet (Randic: col. 5, lines 8-22 and col. 5, lines 44-67 and Fitch: col. 6, line 51-col. 7, line 58).

19. Regarding claims 18 and 27, referring to claims 16 and 24, Randic in view of Fitch discloses that a deviation between the predetermined sequence of values and the sequence of section values includes a repetition of at least one section value, the repetition corresponding to a dropped packet (Randic: col. 5, lines 8-22 and col. 5, lines 44-67 and Fitch: col. 6, line 51-col. 7, line 58).

20. Regarding claims 19 and 28, referring to claims 16 and 24, Randic in view of Fitch discloses that a deviation between the predetermined sequence of values and the sequence of section values includes a repetition of at least one section value, the repetition indicating a packet

loss concealment routine operating in the packet switched network (Randic: col. 5, lines 8-22 and col. 5, lines 44-67 and Fitch: col. 6, line 51-col. 7, line 58).

21. Claims 10, 20, 29, 30, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randic (USPN 6,275,797) as applied to claims 1, 14, 24, and 35 above, and further in view of Fitch (USPN 5,633,909) in further view of Newton ("Newton's Telecom Dictionary").

22. Regarding claims 10 and 30, referring to claims 1 and 29, Randic does not expressly disclose that the representative waveform characteristic is a waveform corresponding to a CELP symbol since Randic discloses comparing matching words rather than CELP symbols (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that using a variety of methods to compare a known test signal with a received test signal are known and are applicable to compare a known telephonic signal to a received telephonic signal (col. 7, lines 57-58). Newton discloses that CELP is a well-known coding technique, used when converting analog signals into digital signals, that compresses the signal by representing the data as a code index number. As such, in CELP the "data transmitted across the network are only the index number of [a] selected code description." It would have been obvious to one of ordinary skill in the art at the time of the invention to use a CELP symbol as the waveform characteristic since CELP symbols distinguish each waveform and thus would be useful in comparing two waveforms where this results in voice recognition software not being needed.

23. Regarding claims 20, 29, and 37, referring to claim 14, 24, and 35, Randic does not expressly disclose comparing each received waveform section to a plurality of CELP waveform

patterns; assigning a symbol number to the received waveform section based on the step of comparing each received waveform section; and generating a sequence of received values using the symbol numbers of the received waveform sections, to thereby obtain the received sequence of values since Randic discloses comparing matching words rather than CELP symbols (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that a variety of methods to compare a known test signal with a received test signal are known and are applicable to compare a known telephonic signal to a received telephonic signal (col. 7, lines 57-58). Newton discloses that CELP is a well-known coding technique, used when converting analog signals into digital signals, that compresses the signal by representing the data as a code index number. As such, in CELP the "data transmitted across the network are only the index number of [a] selected code description." It would have been obvious to one of ordinary skill in the art at the time of the invention to use a CELP symbol as the waveform characteristic by comparing each received waveform section to a plurality of CELP waveform patterns; assigning a symbol number to the received waveform section based on the step of comparing each received waveform section; and generating a sequence of received values using the symbol numbers of the received waveform sections, to thereby obtain the received sequence of values since CELP symbols distinguish each waveform and thus would be useful in comparing two waveforms where this results in voice recognition software not being needed.

24. Claims 13, 21, 31, 32, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randic (USPN 6,275,797) as applied to claims 1, 14, 24, and 35 above, and further in view of Fitch (USPN 5,633,909) in further view of Hardy (USPN 5,748,876).

25. Regarding claims 13 and 32, referring to claims 1 and 31, Randic does not expressly disclose that the representative waveform characteristic includes a semantically encoded waveform since Randic discloses comparing matching words rather than semantically encoded waveforms (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that a variety of methods to compare a known test signal with a received test signal are known and are applicable to compare a known telephonic signal to a received telephonic signal (col. 7, lines 57-58). Applicant discloses, by citing Hardy that semantic waveforms are known in the prior art (page 12, lines 20-22). Hardy discloses that semantic waveforms contain "pre-selected bit patterns" (col. 3, lines 15-27). It would have been obvious to one of ordinary skill in the art at the time of the invention to use semantically encoded waveforms to transmit a sequence number since a sequence number is a "pre-selected bit pattern" where this results in voice recognition software not being needed

26. Regarding claims 21, 31, and 38, referring to claims 14, 24, and 35, Randic does not expressly disclose comparing each received waveform section to a plurality of semantically encoded waveform patterns; assigning a bit-pattern to the received waveform section based on the step of comparing each received waveform section; and generating a sequence of section values using the bit-pattern of the received waveform sections, to thereby obtain the received sequence of values since Randic discloses comparing matching words rather than semantically

encoded waveforms (col. 6, lines 30-32). However, Randic does teach that speech recognition is only one of a variety of properties of voice communication (col. 6, lines 36-43). Fitch teaches, in a system for generating calls and testing telephone equipment, that a variety of methods to compare a known test signal with a received test signal are known and are applicable to compare a known telephonic signal to a received telephonic signal (col. 7, lines 57-58). Applicant discloses, by citing Hardy that semantic waveforms are known in the prior art (page 12, lines 20-22). Hardy discloses that semantic waveforms contain "pre-selected bit patterns" (col. 3, lines 15-27). Thus, it would have been obvious to one of ordinary skill in the art to compare each received waveform section to a plurality of semantically encoded waveform patterns; assign a bit-pattern to the received waveform section based on the step of comparing each received waveform section; and generate a sequence of section values using the bit-pattern of the received waveform sections, to thereby obtain the received sequence of values where this results in voice recognition software not being needed.

Allowable Subject Matter

27. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not fairly suggest having the peak power levels correspond to a value between 0 and N such that the predetermined sequence of values is 1, 2, ..., N or that the transmitted set of N waveforms comprise a single waveform having a monotonically increasing or decreasing power level.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Daniel J. Ryman
Examiner
Art Unit 2665

DJR

Daniel J. Ryman

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